Listing of the Claims:

This listing of the claims will replace all prior versions and listings of claims in the application.

1. (Currently Amended) A sulfate process for producing titania from a titaniferous material which includes the steps of:

(a) leaching the titaniferous material with a leach solution containing sulfuric acid and forming a leach liquor that includes an acidic solution of titanyl sulfate ($TiOSO_4$) and iron sulfate ($FeSO_4$);

(b) separating the leach liquor and a residual solid phase from the leach step (a);

(c) separating titanyl sulfate from the leach liquor from step (b) and using at least part of the leach liquor remaining after separation of the titanyl sulphate as part of the leach solution in one of the leach step (a) or a further leach step;

(d) hydrolysing the separated titanyl sulfate and forming a solid phase containing hydrated titanium oxides;

(e) separating the solid phase containing hydrated titanium oxides and a liquid phase that are produced in the hydrolysis step (d); and

(f) calcining the solid phase from step (e) and forming titania;

(g) a further leach step of leaching the residual solid phase from step (b) with a leach solution containing sulfuric acid and forming a leach liquor that includes an acidic solution of titanyl sulfate and iron sulfate and a residual solid phase;

(h) separating the leach liquor and the residual solid phase from step (g); and

(i) supplying the separated leach liquor to the leach step (a) and/or mixing the separated leach liquor with the leach liquor from step (b).

2. (Previously Presented) The process defined in claim 1 further comprising carrying out the leach step (a) and the further leach step (g) in the same vessel.

3. (Previously Presented) The process defined in claim 2 further comprising returning the residual solid phase from step (b) to the vessel, wherein the residual solid phase forms part of the titaniferous material subjected to leaching in the leach step (a).

4. (Previously Presented) The process defined in claim 1 further comprising carrying out the leach step (a) and the further leach step (g) in a separate vessel or vessels.

5. (Previously Presented) The process defined in claim 4 wherein the further leach step (g) includes supplying the residual solid phase from step (b) to the vessel or vessels.

6. (Previously Presented) The process defined in claim 1 wherein the leach step (a) and/or the further leach step includes selecting and/or controlling the leach conditions in the leach step or steps to avoid undesirable amounts of premature hydrolysis of hydrated titanium oxides and undesirable amounts of premature precipitation of titanyl sulfate.

7. (Previously Presented) The process defined in claim 6 wherein the leach conditions include any one or more than one of acid concentration, leach temperature and leach time.

8. (Previously Presented) The process defined in claim 6 further comprising selecting and/or controlling the acid concentration to be at least 350 g/l sulfuric acid throughout the leach step (a) and/or the further leach step (g) when operating at a leach temperature in the range of 95°C to the boiling point in order to avoid premature hydrolysis.

9. (Previously Presented) The process defined in claim 6 further comprising selecting and/or controlling the acid concentration at the end of the leach step (a) and/or the further leach step (g) to be less than 450 g/l when operating at a leach temperature

in the range of 95°C to the boiling point in order to avoid an undesirable amount of premature precipitation of titanyl sulfate.

10. (Previously Presented) The process defined in claim 6 further comprising selecting and/or controlling the leach conditions so that the titanium ion concentration in the leach liquor is less than 50 g/l in the leach liquor at the end of the leach step (a) and/or the further leach step (g).

11. (Previously Presented) The process defined in claim 10 further comprising selecting and/or controlling the leach conditions so that the titanium ion concentration in the leach liquor is 40-50 g/l in the leach liquor at the end of the leach step (a) and/or the further leach step (g).

12. (Previously Presented) The process defined in claim 1 further comprising carrying out the leach step (a) and/or the further leach step (g) in the presence of an additive that accelerates the rate of leaching the titaniferous material.

13. (Previously Presented) The process defined in claim 12 wherein the additive is selected from the group consisting of iron, a titanium (III) salt, a thiosulfate salt, sulfur dioxide, a reduced sulfur containing species, and mixtures thereof.

14. (Previously Presented) The process defined in claim 1 further comprising carrying out the leach step (a) and/or the further leach step (g) in the presence of a reductant that reduces ferric ions to ferrous ions in the acidic solution or solutions of titanyl sulfate and iron sulfate produced in the leach step (a).

15. (Previously Presented) The process defined in claim 14 wherein the reductant is selected from the group consisting of iron, a titanium (III) salt, a thiosulfate salt, sulfur dioxide, a reduced sulfur containing species, and mixtures thereof.

16. (Previously Presented) The process defined in claim 1 wherein the leach step (a) solubilises at least 50% by weight of the titaniferous material supplied to the leach step.

17. (Previously Presented) The process defined in claim 1 further comprising the steps of precipitating iron sulfate from the leach liquor from step (b) and separating precipitated iron sulfate from the leach liquor prior to the titanyl sulfate separation step (c).

18. (Canceled) The process defined in claim 1 further comprising using at least part of the leach liquor remaining after separation of titanyl sulfate in step (c) as at least part of the leach solution in the leach step (a) and/or in the further leach step (g).

19. (Currently Amended) The process defined in claim ~~18~~ 1 wherein the titanyl sulfate separation step (c) includes a solvent extraction step of extracting titanyl sulfate from the leach liquor from step (b) into a solvent and thereafter stripping titanyl sulfate from the solvent and forming a solution that contains titanyl sulfate and thereafter hydrolysing the titanyl sulfate-containing solution in the hydrolysis step (d).

20. (Previously Presented) The process defined in claim 19 further comprising using at least part of a raffinate from the solvent extraction step as at least part of the leach solution in leach step (a) and/or in the further leach step (g).

21. (Original) The process defined in claim 20 wherein the leach solution in the leach step (a) and the further leach step (g) includes the raffinate and make-up fresh sulfuric acid.

22. (Previously Presented) The process defined in claim 20 wherein the raffinate from the solvent extraction step has an acid concentration of at least 250 g/l sulfuric acid.

23. (Previously Presented) The process defined in claim 19 wherein the solvent extraction step includes contacting the leach liquor with the solvent which includes a modifier.

24. (Previously Presented) The process defined in claim 1 further comprising controlling the hydrolysis step (d) to produce a selected particle size distribution of the hydrated titanium oxides product.